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COOPERATIVE EXTENSION WORK IN AGRICULTURE  
AND HOME ECONOMICS.

U. S. Department of Agriculture  
and State Agricultural Colleges  
cooperating.

States Relations Service,  
Office of Extension Work, South,  
Farmers' Cooperative Dem. Work.  
Washington, D.C.

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EMERGENCY USE OF LIME TO INCREASE CROP PRODUCTION.

Lime may be used to special advantage this year.

It is best used on soils well supplied with organic matter.

It puts soils in good condition and makes their fertilizing constituents  
more available. Place orders and get a supply before the spring rush.

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Many suggestions for the extended use of lime are current for  
the purpose of speeding up crop production this year. This is sound  
doctrine when the lime is used understandingly and it may be done with  
particular advantage this year, but so many unqualified statements have  
appeared that it seems advisable to call attention to certain factors  
concerning the use of lime.

HOW  
LIME  
AIDS  
PRO-  
DUC-  
TION

It should be borne in mind that lime is not a fertilizer in the  
commonly accepted use of the term, that is it does not directly supply  
any potash, phosphoric acid, or nitrogen. It is added to soils for the  
purpose of correcting acid conditions and improving the physical condi-  
tions of heavy soils; it also influences favorably the decomposition of  
the organic matter in the soil and in some cases it may make available  
to a slight extent, insoluble forms of potash and other minerals. Thus  
it aids in increasing crop yields, particularly if there is a good  
supply of organic matter in the soil. If the organic content and  
mineral elements are low, lime may still increase the crop yield for  
the first year, but in the years following, the supply of organic matter

1. 1990年12月25日，在《人民日报》发表署名文章《中国要实行“三民主义”》，主张“三民主义”是中国的唯一出路。

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1. 1990年12月25日，在俄罗斯莫斯科市，俄罗斯总统叶利钦在克里姆林宫正式签署《俄罗斯联邦新宪法》。

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and of minerals will need to be provided for or the land will become less productive. While lime cannot take the place of either fertilizer or good soil management, it should be used as generally as possible this year in connection with the other conditions necessary for large crop yields.

WHEN TO  
APPLY LIME

In the northern states ground limestone and burned lime may be applied during the fall and winter, except on slopes subject to washing, thus lessening spring labor. In the South hydrated lime should never be applied until spring on account of the copious winter rains and in most cases the other forms of lime are probably best applied just before planting. Even in the North, spring is the best time to apply the hydrated form of lime.

HAUL LIME  
IN WINTER

The most important thing north or south is to get the lime hauled to the farm during the fall or winter and before the rush of spring work begins. Then the lime can be applied to best advantage in any form at the proper time after plowing, giving it a shallow working-in before planting. In the Northeastern States where the spring season is short it is especially important that lime be hauled this winter owing to the necessary great hurry of getting crops in on time. In some cases where there is a local supply of limestone, but a shortage of labor for getting enough of it out, it may be practicable for a few farmers to combine and furnish labor at the quarries to secure a sufficient supply.

LIME  
SUPPLY

At present the agricultural lime situation is somewhat as follows: Some lime manufacturers will probably be forced to curtail their production or perhaps cease production altogether, because of the inability to obtain coal and because of shortage of labor. We believe, however, that so far as supply is concerned, there will be

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ample lime production for all agricultural purposes. In fact, there has been such a falling off in the demand for lime for building purposes that the larger lime manufacturers have been making efforts to stimulate the agricultural use of burned lime, aiming to increase this use of lime to the point where it would take care of that formerly used in the building trade. There has, moreover, been an increased production of ground limestone and unless coal and labor shortage should still further interfere with this production, we have no reason to believe that there will not be lime enough for the usual agricultural demand.

The difficulty, however, the farmer will meet in obtaining lime when he wants it, will we believe, be due almost wholly to car shortage. To meet this difficulty, we believe the following recommendations should be made:

ORDER LIME  
EARLY

Farmers should be encouraged to order lime as far in advance of their requirements as possible. The Department recently issued through the Office of Information in the News Letter a recommendation to this effect. Of course, it will require the same number of cars to transport any given quantity of lime whenever it is shipped, but certainly spreading this shipment over as long a period as possible will tend to lessen the congestion.

USE A CON-  
CENTRATED  
FORM

Use as concentrated material as possible. Ordinary burned lime usually sold in barrels or in bulk is the most concentrated form in which lime material can be bought. The objections to the use of this material are that it cannot be stored nor kept any length of time without slacking, it is in an inconvenient form to handle, and is usually purchased for immediate use. Furthermore, in many localities the cost of this material





is considerably greater than the equivalent of calcium oxide in other forms such as ground limestone. Hydrated lime comes next to burned lime in concentration. It is usually marketed in fifty pound sacks. It can be stored and kept indefinitely and, where the price is not out of proportion to other forms, it is probably the form to be recommended, where car shortage is under consideration. Ground limestone is being effectively used and it is usually shipped in bulk and carries about half its weight in calcium oxide. In calcium oxide equivalent four parts of ground limestone is equal to three parts of hydrated lime or two parts of burned lime.

USE LOCAL  
SOURCES.

Encourage so far as possible the utilization of local limestone deposits either for grinding or burning. This is already being done in many places and no doubt the practice could be very widely extended. However, it involves, in the case of grinding, the purchase and delivery of grinding machinery which may be difficult to accomplish, and in the case of local burning, it means the purchase and delivery of fuel unless there is local fuel available. Wherever fuel, either wood or coal, is available, however, together with a local supply of limestone, every effort should be put forth to make use of this limestone in the present emergency.

Oyster shells, if available, may be ground and used with advantage, and if marl of good quality can be had from nearby beds it may pay to use it.

ORDER  
AT ONCE

It is so important to have the lime ready for use when spring opens that it should be ordered at once, and hauled during the winter. Then if used on fields in a good state of fertility, or even on poorer fields where organic matter can be supplied through stable manure, decaying sods, or green manure, it will aid materially in enlarging crop yields this year.

Milton Whitney,  
Chief of Bureau of Soils.

